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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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07/992,892 12/17/92 80111

EXAMINER

LAW OFFICES OF JIM TEGELR  
801 NORTH FIFT STREET, #102  
ALEXANDRIA, VA 22314

PAPER NUMBER

84

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

06/16/92

☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice re Patent Drawing, PTO-948.        |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.                 | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/> _____  |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-10 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1-10 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on \_\_\_\_\_, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

Serial No. 07/992,892  
Art Unit 2304

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This application has been examined.

The disclosure is objected to because of the following informalities:

The abstract should be divided into several sentences in order to be grammatically correct.

The word "Maesurements", is misspelled in figures 1 and 2.

On page 1, line 14, it is required by the applicant to define the term "frequency bin".

On page 2, line 16, it is required by the applicant to define the term "frequency cell".

On page 9, lines 20-21, the phrase, "relative at the fixed at the location ...", is incoherent.

Appropriate correction is required.

Claims 1-10 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

~~be added preceding the phrase "earth orbiting satellites".~~ *JO (ent)*

In regard to claim 2, the phrase, "the Satellite Data Messages", lacks antecedent basis.

In regard to claim 3, the phrases, "the ephemeris data and time models", "the Satellite Data Messages", "the entire frequency uncertainty band", "the receiver local oscillator", "the frequency band", and "the acquisition of subsequent in-view satellites", all lack antecedent basis. The word, "GPS" should be added proceeding the phrase, "receiver local oscillator", in line 2, on page 18. It is required by the applicant to define the term "frequency search cell" in line 5, on page 18.

In regard to claim 4, the phrase, "the in-view satellites", lacks antecedent basis. In addition, the word, "GPS" should be added proceeding the phrase, "receiver position", in line 11, on page 18.

In regard to claim 5, the phrases, "the in-view GPS satellites", "the frequency uncertainty band", "the GPS receiver local oscillator", all lack antecedent basis. It is required by the applicant to define the term "cell" in line 19, on page 18.

In regard to claim 6, the phrases, "the basestation relay", "the

GPS receiver", "the vehicle unit", and "the full range of capabilities", all lack antecedent basis.

In regard to claim 7, in line 3, on page 19, the word "GPS" should be added proceeding the phrase, "satellites transmits...". In line 5, the phrase, "satellite data message block", lacks antecedent basis. In line 6 the phrase, "the ephemeris and time modes", lacks antecedent basis. In line 9, the phrase, "controller means" lacks antecedent basis. In line 10, the phrase, "satellite message data block", should be changed to , "satellite data message block", in order to avoid lack of antecedent basis.

In regard to claim 9, in line 16, on page 19, the phrase, "said basestation relay", lacks antecedent basis.

In regard to claim 10, in line 17, on page 19, the phrase, "pushbutton controlled RF control signal source means", lacks antecedent basis.

The following 102 and 103 rejections are based upon the examiner's best interpretation of the claims in light of the 35 USC 112 errors given above.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

Claims 1,2,and 4 are rejected under 35 U.S.C. § 102(e) as being anticipated by Geier, patent no. 5,202,829.

In regard to claims 1 and 2, Geier teaches a shipboard GPS positioning system having data links to remotely located tailbuoys which are equipped with GPS receivers. Geier teaches a tailbuoy subsystem (TBS) that functions as an earth based source of satellite position data for assisting a mobile shipboard subsystem (SBS) to acquire position information consisting of the ephemeris and time modes, as well as, Satellite Data Messages from all in-view satellites (figure 2, column 2, lines 14-18). The TBS sends position data to the SBS via radio or modem communication channels (figure 2). Geier teaches that a microcomputer system is utilized in the SBS for processing the satellite position data in order to rapidly locate position information from the earth orbiting satellite (column 2, lines 13-19).

In regard to claim 4, in addition to the teachings previously discussed, Greier teaches that the microcomputer system, which contains memory storage means, functions as an independent source of prior knowledge of previous receiver positions (columns 4, lines 64-68 through column 5, lines 1-68).

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

Claims 3 and 5 are rejected under 35 U.S.C. § 102(e) as being anticipated by King et al, patent no. 5,175,557.

In regard to claims 3 and 5, King et al discloses prior art GPS receiver systems in which a parallel search over the entire frequency uncertainty band is conducted in order to obtain positional data from each of the overhead satellites (column 1, lines 37-42). King et al teaches a two channel global positioning system receiver for receiving positional data from each of a plurality of satellites. King et al teaches the calibration of the receiver local oscillator through compensation of, "local oscillator frequency shifts occurring during the sequencing of time by using Doppler information sampled from the continuous tracking channel" (column 10, lines 39-43). The continuous tracking channel receives information from a single satellite overhead. King et al teaches the utilization of this calibration, based upon information obtained from a single satellite overhead, to perform a further parallel search for the remaining in-view satellites (column 10, lines 44-68 through column 11, lines 1-4).

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 6-10 are rejected under 35 U.S.C. § 103 as being unpatentable over Geier in view of Darnell et al, patent no. 5,043,736.

In regard to claims 6,7,8, and 9, in addition to the teachings discussed previously, Geier does not specifically mention that the TBS system, which functions as an earth based source of satellite position data, is independent of the satellite. However, Darnell et al teaches a portable locating unit handset comprising a cellular telephone and GPS system. This portable locating unit handset contains a remote unit receiver that receives information and control signals from a base unit via of a cellular telephone network, thus, independent of the satellite (column 3, lines 61-

65). The cellular telephone network functions as a wireless data channel. The base unit, comprising a computer, functions as controller means connecting satellite message data, contained in the computer's memory, to the remote unit receiver. One of ordinary skill in the art at the time of the invention would have been motivated to combine the teachings of Geier and Darnell et al, because it would permit a GPS receiver with higher degree of accuracy due to its independence from satellite data acquisition coming entirely from the satellites alone. In addition, Darnell et al discloses the advantage of, "versatility for use as a regular cellular telephone in conjunction with a precise navigational locating system ..." (column 1, lines 41-42). Hence, because of the motivation of higher degree of accuracy and the advantage of versatility, a person having ordinary skill in the art at the time of the invention would have found it obvious to combine the teachings of Geier and Darnell et al.

In regard to claim 10, in addition to the teachings mentioned previously, Geier does not mention the use of a pushbutton controlled RF control signal source means for controlling the transfer of position information from a mobile GPS receiver. However, Darnell et al discloses a base unit, comprising a computer with a keyboard, that functions as a pushbutton controlled RF control signal source means (figure 1; column 3, lines 10-15;



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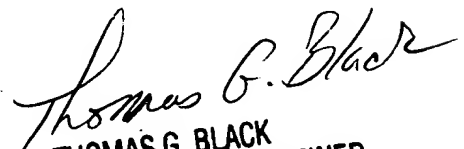
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column 3, lines 55-65). The computer permits control of the portable locating unit handset which contains a GPS receiver. Hence, through the computer, the handset may be instructed to determine its position and transmit its position to the base unit via cellular telephone. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Greier and Darnell et al, because it would permit a user to have direct control of the acquisition of the positional data via a computer terminal containing a keyboard.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie D. Day whose telephone number is (703) 305-9758.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3800.

Julie D. Day  
June 14, 1993

  
THOMAS G. BLACK  
SUPERVISORY PATENT EXAMINER  
GROUP 2300